

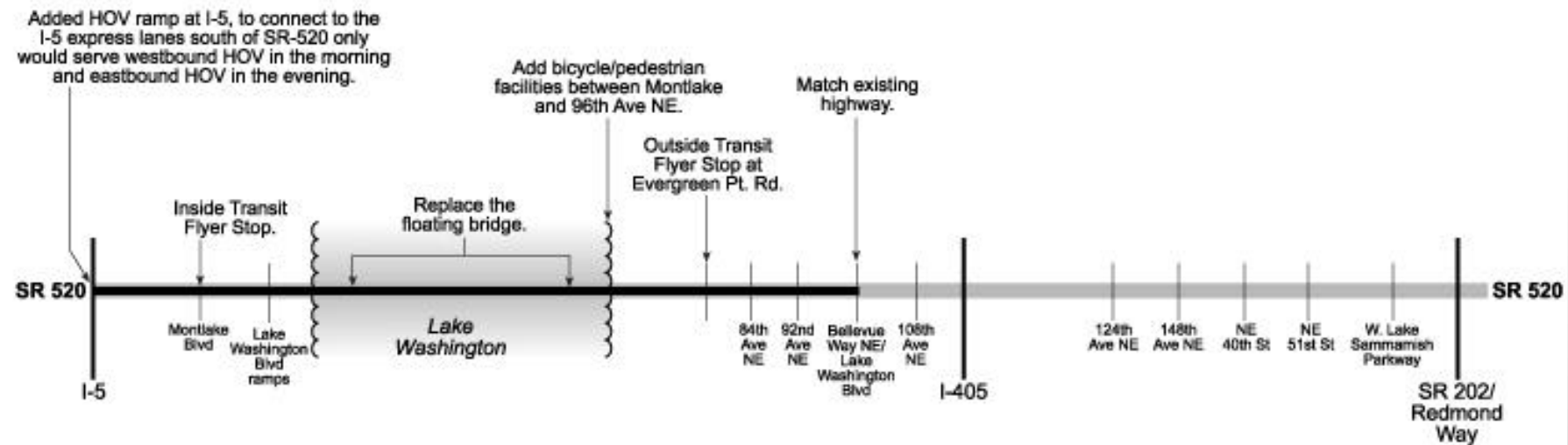
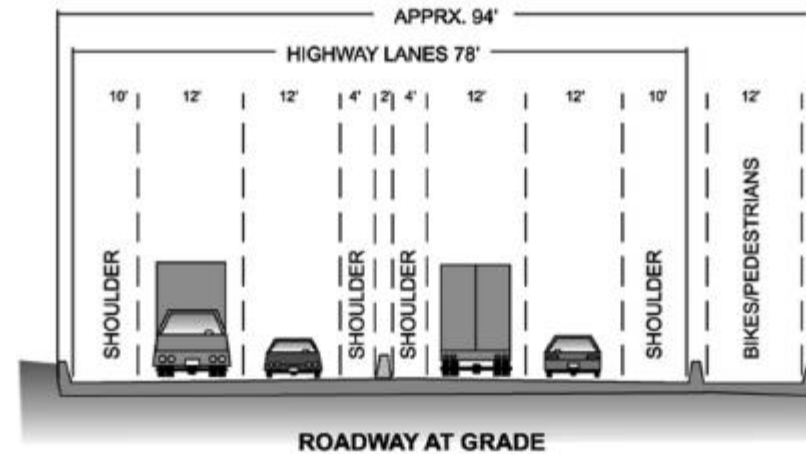
Selecting a Preliminary Preferred Alternative

Supporting Information:

- ✓ Graphic depiction of three build alternatives (4, 6 & 8 lanes) for SR 520 corridor
- ✓ Summary of approximate transportation performance & effectiveness, with associated needed local arterial changes
- ✓ Summary of approximate distinguishing environmental impacts
- ✓ Cost estimate ranges for each alternative
- ✓ Definition of high-capacity transit accommodation in SR 520 corridor.

SR 520 Trans-Lake Washington Project

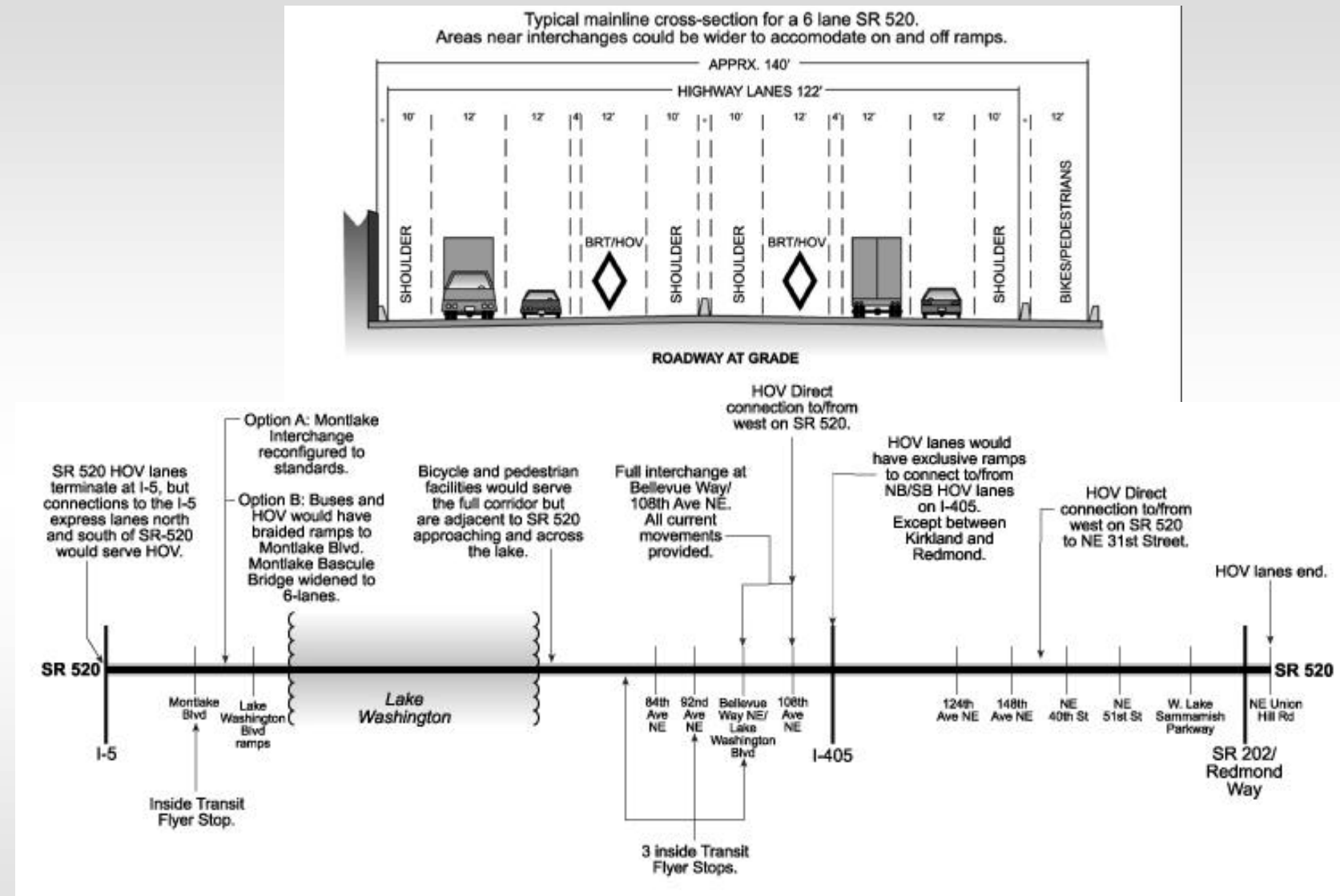
Typical mainline cross-section for a 4 lane SR 520.
Areas near interchanges could be wider to accommodate on and off ramps.



Alternative 2 (4 Lanes) SR 520 Safety and Preservation

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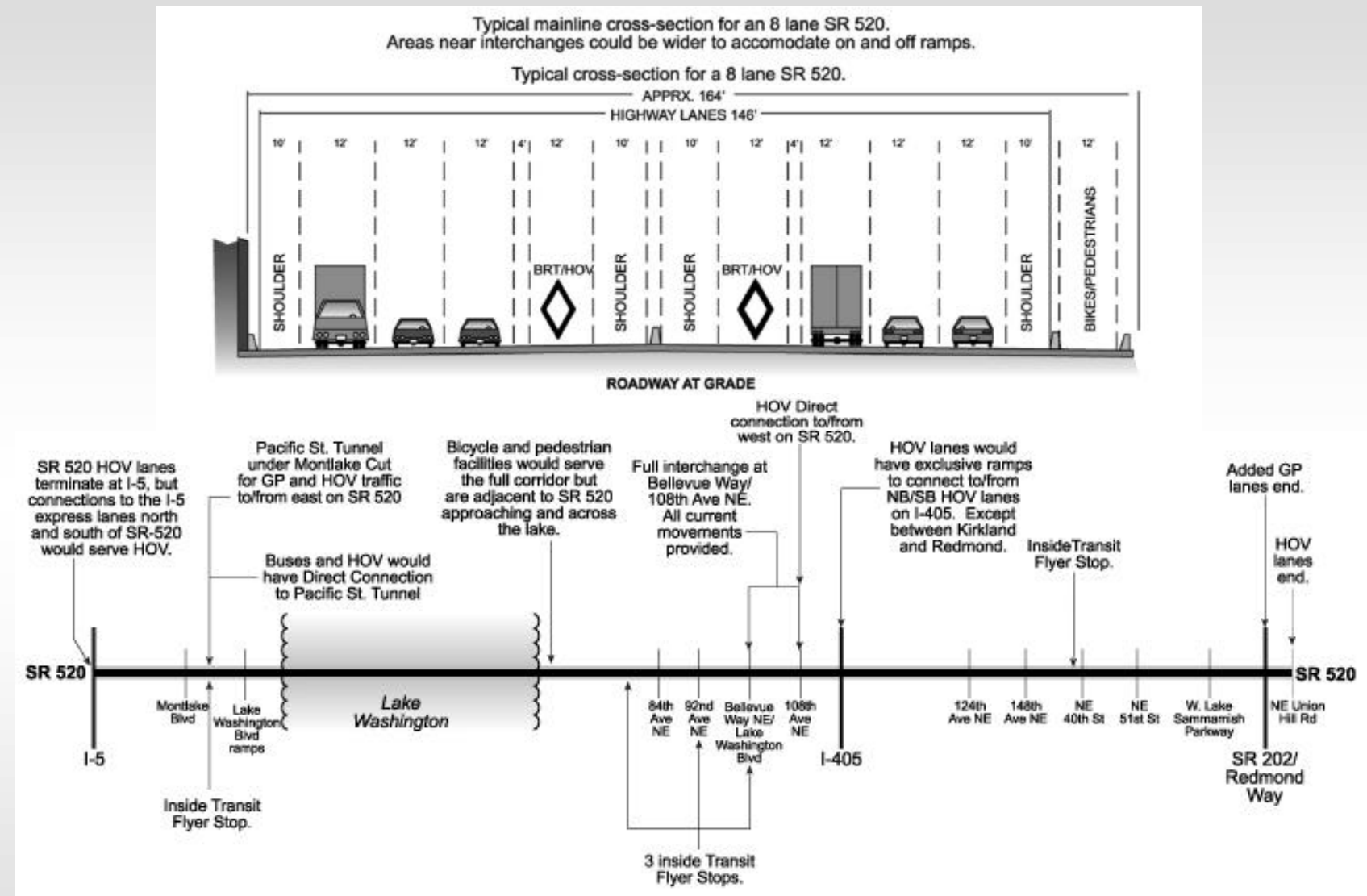
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Alternative 3 (6 Lanes) SR 520 HOV

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Alternative 4 (8 Lanes) SR 520 HOV and GP

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SR-520 Performance (Year 2020)

	4 Lane				6 Lane				8 Lane				
Daily Person Demand (vehicles/day)													
GP	145,000				150,400				220,100				
HOV/Transit	28,250				64,800				73,500				
Total	173,250				215,200				293,600				
Daily Vehicle Demand (vehicles/day)													
GP	116,300				120,600				175,800				
HOV/Transit	4,200				11,100				12,300				
Total	120,500				131,700				188,100				
Reliability	Freight - Heavy corridor congestion reduces reliability. Additional shoulder width in S&P provides a small benefit for				Freight - Improved reliability over No-Action, but still experiences a high level of congestion.				Freight - Additional GP cacpacity improves corridor congestion thus providing corridor reliability.				
	Transit - Same as freight.				Transit - Completion of HOV lanes provides a high level of transit and HOV reliability.				Transit - Completion of HOV lanes provides a high level of transit and HOV reliability.				
Freeway Travel Time During Peak Hour (min) ²													
Peak Direction	AM		PM		AM		PM		AM		PM		
	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	
Travel Time ³	69 (47)	50 (44)	69 (46)	53 (47)	36 (8)	39 (8)	36 (9)	41 (9)	10 (8)	15 (8)	10 (8)	15 (8)	

1 - Congestion defined at mid-span bridge
2 - Travel time between 124th Ave NE and I-5
3 - # GP, (#) HOV
4 - Performance characteristics assume local street improvements are in place (see project impacts)

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Local Arterial Changes Needed to Support Projected Volumes

Six - Lane (2 GP & 1 HOV Lanes)		
East-Side	Lake Washington Boulevard NE/Northup Way: Two westbound left-turn lanes. Widen Lake Washington Boulevard NE	
West-side	Mercer/Fairview: Add third westbound right-turn lane. (Intersection operations remain at LOS F).	Montlake/SR 520 WB Ramps: Create a 4-leg signalized intersection two WB approach lanes and a NB left-turn lane to the WB on-ramp.
	Montlake/SR 520 EB Ramps/Lake WA Blvd: Add a second NB left-turn lane.	Montlake Blvd. (option B): Add second structure parallel to existing bridge.
Eight-Lane (3GP & 1 HOV Lanes)		
East-side	NE 40th Street/156th Avenue NE: Add eastbound right-turn pocket with two dedicated eastbound through lanes.	West Lake Sammamish Parkway NE/Leary Way: Add one approach lane to EB SR-520 off-ramp. Add one lane to WB SR-520 on-ramp.
	Lake Washington Boulevard NE/Northup Way: Three westbound left-turn lanes. Widen Lake Washington Boulevard NE.	148th Avenue NE/Eastbound SR-520 Ramp: Add EB to SB off-ramp lane. Add right turn pocket to EB to NB off-ramp. Add right turn pocket on 148th for NB to EB ramp. Add a GP lane to EB on-ramp (merge to one on-ramp lane).
	92nd Avenue NE/Westbound SR-520 Ramp: Add westbound right-turn	Redmond Way/NE 76th Street (Westbound on-ramp): Add right-turn pocket to NE 76th Street at Redmond Way/westbound ramp intersection. Add a thru lane to SR 520 SB at SR 520/Union Hill
West-side	Mercer/Fairview: Add third westbound right-turn lane.	Montlake/Pacific Place: Add a NB through lane. Remove one EB left-turn lane. Restrict WB approach to right-turn only and remove one lane.
	Roanoke/Harvard/SR 520 WB Off-ramp: Redesign for free-flowing right-turn movement.	Montlake/SR 520 EB Ramps/Lake WA Blvd: Add a second NB left-turn lane. Remove SB right-turn lane (no longer needed). Add a third approach lane for the EB off-ramp. Restripe WB approach to allow left/through/right movements from inside lane.
	Pacific/Pacific: Remove a through lane in the EB and WB directions.	Montlake/SR 520 WB Ramps: Redesign ramp terminal to create a 4-leg intersection and signalize the intersection. Redesigned intersection would provide two approach lanes for the WB off-ramp and a NB left-turn lane for accessing the WB on-ramp.
	Montlake/Pacific Street: Create a split-level intersection. At surface level intersection, add two approach lanes to EB and WB approaches, make signal modifications, allow all movements at the intersection. At below-grade intersection, signalize and provide two SB left-turn lanes, one EB through lane, and a free-flowing right-turn lane.	SR 520 Ramps/Lake WA Blvd: Signalize intersection.

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**4-lane, 6-lane, and 8-lane Alternatives
Distinguishing Environmental Impacts***

Environmental Element	4-lane	6-lane	8-lane
Wetlands	7 acres	22 acres	24 acres
Parks and Trails	9 parklands; 4 acres of direct impact	14 parklands; 7 acres of direct impact	14 parklands; 7 acres of direct impact
Displacements (structures) - Residential	2	14; 16 with parallel Montlake Bridge	17
- Non-residential	4	28	39
Land Required for New Right of Way	6 acres	59 acres	67 acres

* Impacts are approximate and will be refined during the EIS analysis.

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ACCOMMODATING HCT IN THE SR 520 CORRIDOR

Conclusions and Direction from January '02 Executive Committee meeting

- **Two rail corridors across the lake would be substantially underutilized in the time horizon we are designing for**
- **I-90 is the preferred lake crossing for a rail line**
 - **Provides better service within the Eastside because rail lines running from Kirkland and Redmond would travel through downtown Bellevue before crossing the lake**
 - **An I-90 rail line has similar ridership to an SR 520 crossing, with capital costs \$1.8 to \$2.3 Billion lower**
 - **An I-90 rail line provides better system operation through downtown Seattle by balancing high passenger demand from the north with the demand for the south and east**
- **Considering the Trans-Lake decision has a 50-100 year timeframe, the Executive Committee requested the project team consider options for accommodating a future fixed guideway in the SR 520 Corridor**

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The Question

- **The Executive Committee requested that the EIS Alternatives examine accommodating HCT in SR-520 corridor in the future.**

The Response

- **Four Scenarios**
 - **No accommodation**
 - **Accommodate on floating bridge only**
 - **Accommodate on lake crossing and key structures**
 - **Preserve on full corridor**
- **Two segments to consider**
 - **Montlake to 124th Avenue NE (Table 1)**
 - **124th Avenue NE to Redmond (Table 2)**
- **Pros and cons for each scenario**
 - **Discussion needed on appropriate definition**

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SR 520 Trans-Lake Washington Project

**Table 1: HCT Accommodation/Preservation in SR 520
Corridor: Montlake to 124th Avenue NE**

Scenario	Pros	Cons
1. No Accommodation	<ul style="list-style-type: none">No added costs or ROWNo design impactsNo alignment commitment	<ul style="list-style-type: none">HCT implementation difficultHighest total project long term costPotential high future environmental impacts
2. Accommodation on Floating Bridge	<ul style="list-style-type: none">Adds cost only to floating bridge and foundations of approach spansNo/minimal additional ROW required, no additional displacementsHigh flexibility for HCT alignment on either side of lakeSmallest investment risk if HCT never implemented	<ul style="list-style-type: none">HCT implementation costly and disruptive beyond floating bridgeHigher total cost and environmental impactsEIS analysis of future HCT line may be required now if it increases ROW and/or environmental impacts for Trans-Lake Project compared to “No Accommodation”*
3. Accommodation on Entire SR 520 Lake Crossing and Key Structures (eg, Lids, Underpasses, Interchanges)	<ul style="list-style-type: none">Integrated design reduces overall costs and impacts of both projects combinedHCT implementation less complex and disruptive, since key structures are in place	<ul style="list-style-type: none">Moderate to high cost impacts to the Trans-Lake Project with very uncertain HCT timing and fundingSome added ROW and potential impacts to the Trans-Lake Project for that may prove in future to be unnecessaryLess flexible for HCT alignment changesEIS of future HCT line will probably be required now if it increases ROW and/or environmental impacts for Trans-Lake Project compared to “No Accommodation”*
4. Preservation on Full Corridor	<ul style="list-style-type: none">Lowest cost for implementing future HCTPotential for lowest overall cost and environmental impacts of both projects combinedAllows optimal HCT alignment to be fully integrated with highway design and construction	<ul style="list-style-type: none">Highest design and cost impact for Trans-Lake Project with uncertain HCT project timing and fundingRequires further design development now of both highway and HCT alignments, to optimize combined projectsLeast flexible for HCT alignment changesHighest risk of unnecessary property acquisition or constructionEIS analysis of future HCT line will very likely be required now since it will increase ROW and environmental impacts for Trans-Lake Project compared to “No Accommodation”*

*If this alternative is considered further, the Federal Highway Administration (FHWA), Federal Transit Administration (FTA) and Legal Counsel should be consulted about the legal issues related to ROW acquisition, environmental impacts and costs for an HCT project which is far in the future and whose design has not been fully developed or analyzed.

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SR 520 Trans-Lake Washington Project

**Table 2: HCT Accommodation/Preservation in SR 520
Corridor: 124th Avenue NE to Redmond**

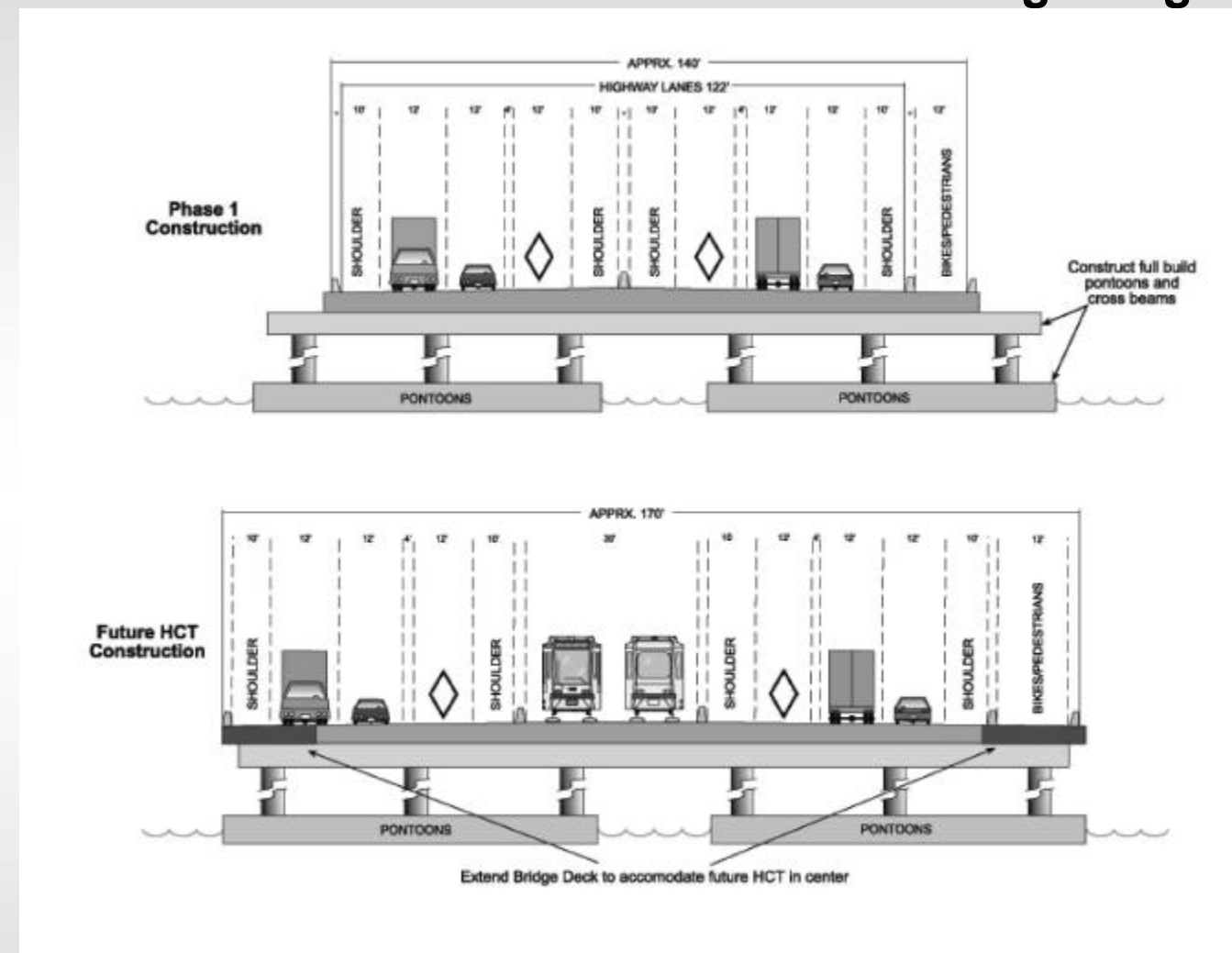
Scenario	Pros	Cons
1. No Accommodation	<ul style="list-style-type: none">• No added costs or ROW• No design impacts• No alignment commitment	<ul style="list-style-type: none">• Increases complexity of HCT design• Some HCT design compromises may be required to reduce impacts• Higher costs for future HCT line due to uncoordinated design
2. Accommodation at Key Structures	<ul style="list-style-type: none">• HCT implementation less complex and disruptive, since under-crossing north of Overlake will be in place• No additional ROW or displacements likely required as part of Trans Lake Project	<ul style="list-style-type: none">• Requires early investment in under-crossing of SR 520 north of Overlake as part of Trans-Lake Project• Potential risk of unnecessary under-crossing construction if HCT alignment changes• Requires further design development now of HCT alignment at under-crossing
3. Preservation on Full Corridor	<ul style="list-style-type: none">• Integrated design over length of corridor reduces overall costs and impacts of both projects combined• Ease of HCT line implementation optimized	<ul style="list-style-type: none">• Very high cost impact for Trans-Lake Project primarily due to additional ROW acquisition, that may prove to be unnecessary• Least flexibility for future HCT alignment changes• Requires significant design development now throughout corridor to refine HCT envelope requirements• EIS analysis of future HCT line will very likely be required now since it will increase ROW and environmental impacts for Trans-Lake Project compared to “No Accommodation”**

*If this alternative is considered further, the Federal Highway Administration (FHWA), Federal Transit Administration (FTA) and Legal Counsel should be consulted about the legal issues related to ROW acquisition, environmental impacts and costs for an HCT project which is far in the future and whose design has not been fully developed or analyzed.

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Potential HCT Accommodation on Floating Bridge



6-Lane Example (4-Lane & 8-Lane Accommodation Scenarios Would Vary in Width)

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